

REMARKS

Claims 1-54 are now pending in the application. Claims 17, 21, 37, 39-40, 42-44 and 48 are amended. Support for the amendments to the claims can be found throughout the drawings and specification. Therefore, no new matter has been added. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 2, 5, 6, 7, 8, 10, 11, 14, 15, 16, 28, 29, 32, 33, 34, 35, 37, 38, 41, 42, and 43 are rejected under 35 U.S.C. § 102(e) as being anticipated by Shu et al. (U.S. Pub. No. 2007/0078624). Claims 17, 21, 44 and 48 are rejected under 35 U.S.C. § 102(e) as being anticipated by Rothman et al. (U.S. Pat. No. 7,290,178). These rejections are respectfully traversed.

Claim 1 recites a wireless network device for communicating with a network that includes memory to store an image. The image includes a plurality of virtual machines and only one multi-tasking operating system. Each of the virtual machines comprises a wireless network application to execute on the multi-tasking operating system. The wireless network device also includes a processor to execute the virtual machines. The

wireless network device also includes a port that includes a physical-layer device to communicate with the network and a media access controller to communicate with the physical-layer device and the processor.

A. Shu does not show, teach, or suggest a wireless network device including an image comprising a plurality of virtual machines.

As best understood by Applicants, Shu is directed to a typical wireless network system that, among other things, does not show teach or suggest virtual machines. Nevertheless, the Examiner asserts that a plurality of virtual machines are disclosed in Paragraph [0021] of Shu (emphasis added):

In the typical wireless LAN, a device is either manually configured to be a dedicated access point (AP) or manually configured to be a client station, and does not have the functionality of both. In the present invention, a wireless device includes a software AP (Soft AP). Such a wireless device is said to be Soft AP capable. The Soft AP capable device contains the functionality of both a client station and a wireless LAN AP, and can be configured to emulate one or the other, or both, at any given time. The Soft AP can function with a variety operating systems (e.g., Windows, Linux, Unix, Lindows, MacOS, etc.) and on a variety of wireless devices (e.g., Desktops, Laptops, Personal Digital Assistants, etc.). Further, the Soft AP of the present invention can either be host-based or not; that is, the Soft AP will either use the host device processor or its own processor to perform its software functions.

Applicants have carefully reviewed Paragraph [0021] of Shu and must disagree. As best understood by Applicants, Paragraph

[0021] of Shu indicates that a software AP device contains a software AP. In other words, even if the software AP of Shu were a virtual machine, which it is not, each software AP device of Shu only discloses one software AP.

Nevertheless, the Examiner asserts that Paragraph [0021] of Shu discloses that the software AP capable device contains the functionality of both a client station and a wireless LAN AP, and can be configured to emulate both. However, even if the software AP capable device can emulate both a client station and a wireless LAN AP, Shu does not show, teach or suggest that the software AP capable device includes multiple software APs. Instead, Shu merely discloses that a network device may emulate multiple devices and may also include a single software AP.

In contrast, the wireless network device of claim 1 includes a plurality of virtual machines.

For anticipation to be present under 35 U.S.C §102(b), there must be no difference between the claimed invention and the reference disclosure as viewed by one skilled in the field of the invention. Scripps Clinic & Res. Found. V. Genentech, Inc., 18 USPQ.2d 1001 (Fed. Cir. 1991). All of the limitations of the claim must be inherent or expressly disclosed and must be arranged as in the claim. Constant v. Advanced Micro-Devices, Inc., 7 USPQ.2d 1057 (Fed. Cir. 1988).

Claim 1 recites a wireless network device that includes a plurality of virtual machines that are not shown, taught or suggested by Shu. Claim 1 is believed to be allowable for at least this reason.

B. Shu does not show, teach, or suggest virtual machines.

Applicants have carefully reviewed Shu and fail to find any disclosure, teaching, or suggestion that the "software APs" are virtual machines, as alleged by the Examiner. Paragraph [0022] of Shu provides examples of the software AP as a dual mode Network Interface Card (NIC) with a Network Driver Interface Specification (NDIS) NIC miniport driver and an NDIS intermediate driver. As best understood by Applicants, none of the examples of software APs in Shu correspond to virtual machines nor do they provide the functionality of virtual machines.

In contrast, virtual machines, as discussed in Paragraph [0023] of the Application, create a virtualized environment between a computer platform and its operating system. Virtual machines also allow one physical resource to function as multiple physical resources.

In other words, claim 1 provides a network device, having limited physical resources, with multiple virtual machines that include multiple wireless applications. Because of the

virtualized environment, the virtual machines may operate concurrently without having to shut down or boot-up to switch between wireless applications. The network device of claim 1 may therefore switch between wireless applications of the virtual machines without having to separately boot-up each wireless application. Separate boot-ups are not required because the virtual machines may run concurrently in the virtual environment.

In contrast, switching between typical wireless devices to use a physical resource, as in Shu, generally requires separate booting-up or activating operations of the wireless devices for each use of the physical resource. Shu does not discuss how a processor switches between software APs, nor does Shu even mention that a software AP includes a virtual machine.

Therefore, claim 1 is believed to be allowable for at least this additional reason.

Claim 17 recites that a wireless network device for communicating with a network includes memory. The memory stores an image comprising a plurality of virtual machines and only one multi-tasking operating system. Each of the virtual machines comprises a wireless network application to execute on the multi-tasking operating system. The wireless network device also includes a plurality of virtual machine device drivers.

Each one of the virtual machines directly communicates with a respective one of the virtual machine device drivers. The wireless network device also includes a processor to execute the virtual machines and a bus to communicate with the processor and the network.

Amendments to claim 17 are fully supported by the Application as filed, and namely FIG. 6 and the related Detailed Description. Therefore, no new matter has been added.

C. Rothman does not show, teach, or suggest that each one of the virtual machines directly communicates with a respective one of the virtual machine device drivers.

As best understood by Applicants, Rothman includes a first virtual machine 114 that includes a device driver and a second virtual machine that does not directly communicate with a device driver, as seen in FIG. 1 of Rothman (provided below).

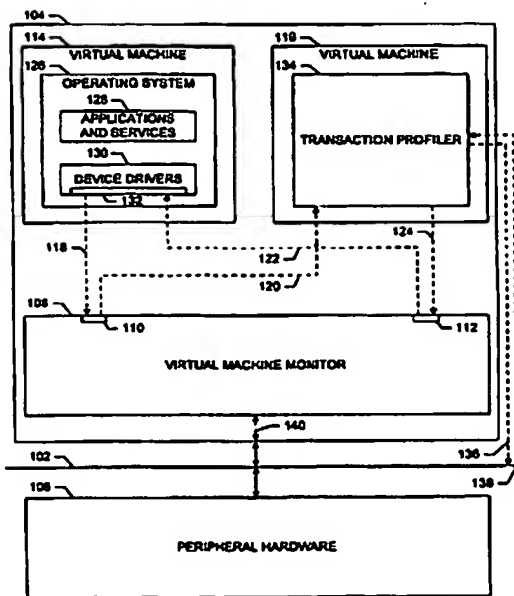


FIG. 1

In contrast, each virtual machine in claim 17 directly communicates with a respective device driver. Claim 17 therefore includes elements not shown, taught or suggested by Rothman and is believed to be allowable for at least this reason.

D. Other Claims

Independent claims 10, 28 and 37 are allowable for at least similar reasons as claim 1. Independent claim 44 is allowable for at least similar reasons as claim 17. Dependent claims 2-9, 11-16, 18-27 and 29-36, 38-43 and 45-54 ultimately depend from claims 1, 10, 17, 28, 37 and 44 and are therefore allowable for at least similar reasons.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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